

REMARKS

Claims 1-3, 5-12, 14-18, 24-50, 52-56, and 62-65 are all the claims pending in the application. Claims 28-65 were previously withdrawn. Claims 4, 13, 19-23, 51 and 57-61 are canceled herein.

Claim 1 has been amended to recite that the antimicrobial agent is “migratory” and “exhibits controlled migration through said polymeric binder to the surface of the composite material.” Support for the amendment to claim 1 can be found, for example at paragraph [0042] of the specification. Claim 1 has also been amended to remove the phrase, “homogeneously distributed in the polymeric binder, such that the antimicrobial agent migrates through said polymeric binder.” Claim 1 has been further amended to recite that the antimicrobial agent is “present in the composite material at a level of at least 500 ppm based on the weight of said composite material.” Support for this amendment to claim 1 can be found, for example, in claim 14. Claim 1 has also been amended to recite that the natural aggregate makes up between about 85% to about 96% by weight of the composite material. Support for this amendment to claim 1 can be found in canceled claim 4.

Claims 5-6 and 14-15 have been further amended for clarification purposes.

Claim 16 has been amended to clarify that the “composite further comprises an antimicrobial agent” selected from the group consisting of quarternary ammonium compounds, quarternary ammonium compounds having an unsaturated reactive group, metals, and mixtures thereof. Support for this amendment can be found, for example in the specification at paragraph [0051]. Claim 16 has been further amended for clarification purposes.

Withdrawn claim 52 has been amended to depend from claim 28 and has additionally been amended for clarification purposes. Withdrawn claims 52-54 and 62-63 have been further amended for clarification purposes.

Thus, no new matter has been added herein. Entry of the Amendment is respectfully requested.

I. Response to Claim Rejections under 35 U.S.C. § 112 (Written Description)

Claims 13 and 19-23 have been rejected under 35 U.S.C. § 112 as allegedly failing to comply with the written description requirement. Office Action at pages 2-3.

Applicants previously amended claim 1 to recite that the “antimicrobial agent migrates through said polymeric binder.” The Examiner asserts that there is no support in the present specification showing that the antimicrobial agents of claims 13 and 19-23 can migrate through the polymeric binder.

Without acquiescing to the merits of the rejection, Applicants cancel claims 13 and 19-23 herein, rendering this rejection moot.

Withdrawal of the rejection of claims 13 and 19-23 under 35 U.S.C. § 112, written description, is respectfully requested.

II. Response to Claim Rejections under 35 U.S.C. § 112 (Indefiniteness)

Claims 1-27 have been rejected under 35 U.S.C. § 112 as allegedly being indefinite. Office Action at pages 3-5.

Regarding claim 1, the Examiner asserts that “homogenously distributed (antimicrobial) agents” that are also “migrated” is internally inconsistent. Specifically, the Examiner contends that it is unclear how there can be both a migration of antimicrobial agents and still have a composite with the antimicrobial agents homogenously distributed.

Regarding claims 13 and 19-23, the Examiner reiterates that the present specification does not show support for the migration ability of the antimicrobial agents of claims 13 and 19-23 through the polymeric binder.

Regarding claim 16, the Examiner asserts that it is unclear how the quaternary compounds can migrate to the surface, in view of present disclosure that the compounds are locked in place (paragraph [0051] of the present specification). The Examiner suggests the Applicants amend claim 16 to “further comprise” the agents of claim 16, as “the Applicant is supported for mixtures of quaternary ammonium compounds and antimicrobial compounds that exhibit the ability to migrate.”

Initially, claims 4, 13 and 19-23 are canceled herein, rendering the rejection moot as to these claims.

With regard to claim 1, without acquiescing to the merits of the rejection, Applicants amend claim 1 herein to remove the recitation “homogeneously distributed in the polymeric binder, such that the antimicrobial agent migrates through said polymeric binder.” For clarification, Applicants further amend claim 1 herein to recite that the antimicrobial agent is “migratory” and “exhibits controlled migration through said polymeric binder to the surface of the composite material.”

Applicants submit that the amendments to claim 1 no longer renders the claim internally inconsistent.

For support, Applicants direct the Examiner to paragraph [0042] of the present specification, wherein the mechanism of antimicrobial movement within the polymeric binder is discussed in detail. Specifically, the presently claimed invention exhibits a unique antimicrobial agent-mechanism of action, wherein the removal of antimicrobial agents from the outer surface

of the binder triggers additional agents within the binder to migrate to the surface to reestablish equilibrium and replenish lost or removed surface agents.

With regard to claim 16, Applicants have amended the claim to recite that the antimicrobial agent “further comprises an antimicrobial agent” selected from the group consisting of quarternary ammonium compounds, quarternary ammonium compounds having an unsaturated reactive group, metals, and mixtures thereof, as proposed by the Examiner at page 5 of the Office Action. Applicants submit that the amendment to claim 16 no longer renders the claim “unclear” as asserted by the Examiner.

In view of the above, withdrawal of the rejection of claim 1 and dependent claims 2-3, 5-12, 14-18, and 24-27 under 35 U.S.C. § 112, indefiniteness, is respectfully requested.

III. Response to Claims Rejection under 35 U.S.C. § 102

Claims 1-2 and 8-27 have been rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,663,877 to Appleton et al. (“Appleton”). Office Action at pages 5-8.

Regarding claims 1, 2, 8-10, 13, 17, 18, and 24, the Examiner asserts that Appleton teaches a cultured marble solid surface with a filler (col. 1, lines 25-30), antimicrobial agent (column 2, lines 42-63), resin (column 3, lines 45 spanning column 4, line 45) and a curing agent (column 5, lines 10-15).

The Examiner further contends that the agents of Appleton tend to migrate through the polymeric binder, as evidenced by the fact that the antimicrobial effectiveness is time dependent (24 hours) before having full effect.

The Examiner also asserts that Appleton teach the same materials as the present invention, including Triclosan as antimicrobial agent and polyester as the polymeric binder. The

Examiner concludes that since Appleton allegedly teaches the same materials as the present invention, it is expected that the antimicrobial agent will be homogeneously distributed in the polymeric binder such that the agent migrates through the binder.

In response and without acquiescing to the merits of the rejection, Applicants amend claim 1 herein to recite that the natural aggregate “makes up between about 85% to about 96% by weight of the composite material.” Appleton does not teach or fairly suggest a composition having this element and thus cannot be said to anticipate present claim 1 and dependent claims 2-3, 5-12, 14-18, and 24-27.

Withdrawal of this rejection under 35 U.S.C. § 102(e) is respectfully requested.

IV. Response to Claims Rejections Under 35 U.S.C. § 103

A. Claims 3-7 have been rejected under § 103(a) as being unpatentable over Appleton, as applied to claims 1, 2, and 8-27 above, in view of WO/0023524 to Sakai et al (“Sakai”). Office Action at pages 8-9.

In the Office Action, the Examiner admits that Appleton does not disclose the amount of natural aggregate and polymeric resin binder. However, the Examiner asserts that Sakai teaches a countertop with the same general components as Appleton and further teaches that the natural aggregate can be present in the amounts claimed.

Initially, Applicants cancel claim 4 herein, thus mooting the rejection as to this claim.

With regard to claims 3 and 5-7, Applicants respectfully traverse.

In response, Applicants submit that the Examiner’s proposed combination of Appleton and Sakai do not render present claims 3 and 5-7 obvious for at least the following reasons.

In order to establish *prima facie* case of obviousness, the prior art reference, or references when combined, must teach or suggest all of the claim limitations.

Present claim 1 recites a composite material comprising antimicrobial agents that can exhibit controlled migration through the polymeric binder. Specifically, the present antimicrobial agents migrate to the surface of the polymeric material when surface agents are depleted to reestablish equilibrium. See paragraph [0043] of the present specification. In order to retain this characteristic, the antimicrobial agent of present invention must be soluble in the polymeric resin. Appleton does not teach or suggest this element, and Sakai fails to correct this deficiency.

With respect to Appleton, the Examiner asserts that the solid surface composition of Appleton has an outer surface with an antimicrobial effectiveness within 24 hours, which shows that the agents tend to migrate to the surface. Office Action at page 6.

However, contrary to the Examiner's assertion, there is no suggestion or teaching in Appleton of antimicrobial agent migration. Rather, Appleton only teaches that the outer surface of the polymeric matrix has an antimicrobial effectiveness, which requires continued surface restoration to maintain its effectiveness. See Appleton, column 5, lines 31-35.

In the Office Action, the Examiner asserts that increased antimicrobial effectiveness within 24 hours tends to show that the antimicrobial agents of Appleton also demonstrate migration. However, Applicants submit that this effect only serves to provide a distinction between the present composite material and the solid surface material of Appleton. Specifically, the antimicrobial agents of Appleton are deposited on the surface such that the outer surface of the polymeric matrix has an antimicrobial effectiveness. See Appleton, column 3, lines 46-49. Thus, it would predictably follow that antibacterial effectiveness will increase as a function of time, as the antimicrobial agents are not instant acting. See, for example, Table 9 of Appleton, showing an increase in antimicrobial effectiveness from 6 hours to 24 hours for Examples 1-10.

This effectiveness, however, does not demonstrate *de facto* migration, and Appleton does not teach or suggest the same.

The mechanism of antimicrobial “restoration” in Appleton further emphasizes the difference between the present composition and the solid surface composition of Appleton. Specifically, in the composition of Appleton, surface-containing antimicrobial agents are diminished over time (column 5, lines 31-35) and are replenished only by ablating or abrading the surface of the composition by about 1 and 28 microns. See Appleton, column 5, lines 36-41 and column 6, lines 16-18. This “restoration” process suggests that in the composition of Appleton, the antimicrobial agents are consumed in a short time period, leaving the composition with only a temporary antimicrobial effectiveness.

In contrast, the antibacterial effect of the present composition is permanent and maintained throughout the lifetime of the composition. Furthermore, due to the migratory properties of the agents within the mixture, the presently claimed invention requires no specific treatment to restore the antibacterial effect. For support, Applicants attach the Product Care webpage for the presently claimed invention to demonstrate that certain specific treatments, such as repolishing, are not required to restore antimicrobial effect and rather is strongly discouraged against. Available at www.silestone.com/precauciones.asp?lan_IN. Accordingly, it is clear that Appleton does not teach a composition having antimicrobial agents that exhibit controlled migration through the polymeric binder to the surface of the composite material, as is required by present claim 1.

Sakai does not correct the deficiency of Appleton. Rather, Sakai teaches a composition having inorganic agents that are not soluble in resin and therefore will be disposed on the surface of the composite material. Therefore, neither Appleton nor Sakai teach or suggest a composition

having antimicrobial agents that exhibit controlled migration through the polymeric binder to the surface of the composite material, as is required by present claim 1. Accordingly, even when Appleton and Sakai are combined, one skilled in the art would not arrive at the present invention because elements of Applicants' invention are missing. As claims 3, and 5-7 depend from and therefore must contain all of the limitations of claim 1, Appleton and Sakai cannot be said to render obvious present claims 3 and 5-7.

In addition, Applicants submit that there is no suggestion or motivation to utilize the amount of aggregate and resin of Sakai in the composite material of Appleton because the proposed modification would drastically change the composition such that Appleton's composite would be rendered unsatisfactory for its intended aesthetic and antimicrobial purposes.

Specifically, the compositions of Appleton and Sakai are not designed arbitrarily, rather, the components are specific to and necessary for their respective aesthetic and antimicrobial purposes.

Appleton discloses a solid surface material comprising an acrylic matrix with ATH as filler, Corian®. See column 1, line 35 of Appleton. Appleton further discloses that these solid surface materials comprise a resin, a filler and an antibacterial agent. See column 2, lines 1-2. Regarding the amounts of these components, Appleton discloses that the fillers can be present in effective amounts from as low as about 20% up to about 75% by weight (see col. 4, lines 63-65) and that the amount antibacterial agent is at least about 0,1% by weight (see col. 3, lines 52-55). The examples of Appleton (see Tables 1-3) define as the preferred filler amount around a 65% by weight.

In contrast, Sakai discloses a composite material that comprises an organic component, an inorganic component and an inorganic antimicrobial agent. See abstract and column 8, lines

59-62. The inorganic component amount is established over a 60% by weight with respect to the total amount and more preferably over a 80% by weight. See column 3, lines 20-23. This preferred amount is very different to the 65% disclosed in Appleton. Therefore, as compared to the composite of Sakai, the Appleton composite contains a lower petrous aggregate content and a higher resin content. This compositional difference explains why the composite of Appleton has a closer appearance to a plastic composite. See Sakai, column 4, lines 65-67.

These compositional differences affect not only the appearance of each composition but also the physical and chemical properties of the compositions. Whereas the composite material disclosed by Appleton has a higher appearance to a plastic material, the composition of Sakai has the appearance of a natural stone. These products will therefore have very different properties such as the resistance to scratching, resistance to flexion, or density. For example, the composition of Appleton is thermoforming and can be repaired with woodworking tools, while the composition of Sakai cannot. See the attached data specification sheets and product descriptions, also available at:

http://www.corian.es/Corian/es_ES/assets/downloads/documentation/what_is_corian_es.pdf and <http://www.silestone.com/downloads/espagnol/folleto-arquitectos.pdf>.

Moreover, the differences in particle size serve to further distinguish the compositions of Appleton and Sakai. Sakai discloses two groups within the inorganic component based on the particle size, small particles between 2-70 mesh, and filling particles below 100 mesh. The particle size combination of Sakai is essential to give the final composition the properties and desired appearance of the product. The particles of bigger size are the principal factor for the external appearance and the physical nature of the man-made stone (Sakai, col. 3, lines 59-65),

while the smaller particles contribute to the solidness and flexibility of the man-made stone. See column 4, lines 1-5 of Sakai.

In contrast to Sakai, Appleton discloses a particle size on a much smaller scale. With regard to the particle size of the inorganic component, Appleton only discloses that the ATH particle size of Example 59 is 45Fm ($1\text{fm} = 10^{-15}\text{m}$)¹. Thus, the resulting particle size difference between Appleton and Sakai is dramatic. Appleton discloses a composition having particles of dramatically smaller and uniform size, as a means to obtain a product with an aesthetic and properties different from the product obtained by Sakai.

Accordingly, in view of the above differences in composition and resulting particle size between the compositions of Appleton and Sakai, one skilled in the art would not be motivated to substitute the amount of aggregate and resin of Sakai in the composite of Appleton because the proposed modification would drastically change the intended appearance and composition of the resulting product.

Furthermore, Applicants submit that one skilled in the art would not be motivated to substitute the amount of aggregate and resin of Sakai in the composite of Appleton because Appleton teaches a manufacturing method not suited for larger aggregate concentrations.

The technology used by Appleton to produce a Corian®-like product consists of “casting,” which involves casting the mixture into a mold and letting it cure at room temperature (col. 5, lines 17-19 and col. 13, lines 49-51). However, in order to produce a composition having an aggregate component of over 80% and less than a 20% of resin, the casting method could not

¹ Applicants consider that the measurement unit “Fm” to be an impossibly small value, and instead consider that the particle size in Appleton is in micrometers. If the measurement unit is indeed micrometer and not “Fm,” the resulting particle size difference between Appleton and Sakai is dramatic nonetheless.

be used. Mixing the aggregate and resin components of Sakai in the composite of Appleton would result in a mixture having different characteristics from Corian® that would not allow the mixture to be mold and processed by the casting methods of Appleton to produce a Corian®-like product.

In view of the above, the Examiner is requested, respectfully, to withdraw the rejection of claims 3 and 5-7 over Appleton in view of Sakai.

B. Claims 14, 15, 18, and 22 have been rejected under § 103(a) as being unpatentable over Appleton, as applied to claims 1, 2, and 8-27 above. Office Action at pages 9-10.

Applicants initially note that claim 22 has been canceled, thus rendering moot the rejection as to this claim.

With regard to claims 14, 15, and 18, Applicants respectfully submit that Appleton does not render obvious the present invention because the prior art reference does not teach or suggest all of the claim limitations.

Present claims 14, 15, and 18 depend from claim 1, and thus contain all of the limitations of claim 1. As discussed above, Appleton does not teach or suggest a composition having a natural aggregate that makes up between about 85% to about 96% by weight of the composite material. Accordingly, Appleton cannot be said to render obvious present claims 14, 15, and 18.

In view of the above, the Examiner is requested, respectfully, to withdraw the rejection of claims 14, 15, and 18 over Appleton.

C. Claims 1-27 have been rejected under § 103(a) as being unpatentable over Sakai, in view of Schweizer et al., "Triclosan: a widely used biocide and its link to antibiotics"

("Schweizer") or EP 1428805 to Ramirez et al. ("Ramirez") for reasons of record. Office Action at pages 10-12.

The Examiner admits that Sakai fails to disclose antimicrobial agent, and resorts to Schweizer and Ramirez as teaching the use of organic antimicrobial agent in cementitious composite mixtures.

Initially, Applicants have canceled claims 4, 13 and 19-23 herein, thus the rejection is moot as to these claims.

With regard to present claims 1-3, 5-12, 14-18, and 24-27, Applicants respectfully traverse the rejection over Sakai in view of Schweizer or Ramirez for the following reasons.

Present claim 1 recites a composite material comprising antimicrobial agents that can exhibit controlled migration through the polymeric binder. Specifically, the present antimicrobial agents migrate to the surface of the polymeric material when surface agents are depleted to reestablish equilibrium. See paragraph [0043] of the present specification. In order to retain this characteristic, the antimicrobial agent of present invention must be soluble in the polymeric resin. Appleton does not teach or suggest this element, and Sakai fails to correct this deficiency.

The composite of the present invention requires an antimicrobial agent that can exhibit controlled migration through the polymeric binder. In contrast, Sakai employs inorganic agents that are not soluble in resin and therefore will be disposed on the surface of the composite material. To correct this deficiency, the Examiner cites Ramirez and Schweizer as disclosing Triclosan, an organic antimicrobial agent.

With regard to Ramirez, the composition of Ramirez is obtained by adding Triclosan to a polar aqueous solution such as water. See Ramirez, paragraph [0023]. In this connection,

Triclosan is a hydrophobic agent requiring non-polar medium to solubilize. If Triclosan is added to a polar aqueous media such as a water, the agent cannot homogenously solubilize as required by the presently claimed invention, wherein the present antimicrobial agent must be soluble in the polymeric resin. Accordingly, if one skilled in the art where to utilize the method taught by Ramirez in the composition of Sakai, Triclosan will be disposed on the surface of the composite material as another inorganic aggregate. Accordingly, the combination of Sakai and Ramirez would not lead to the present composition comprising an organic microbial agent that is homogenously distributed in the polymeric binder and exhibits controlled migration through the polymeric binder.

With regard to Schweizer, the Examiner cites Schweizer as allegedly teaching that Triclosan is known in the art and used in cementitious composite mixtures. In this respect, Applicants remind the Examiner that the law is that there must be an articulated rationale for combining the elements disclosed in the reference in order to establish a *prima facie* case of obviousness. Sakai teaches a soft composite material, and does not contain any reference to antimicrobial agents or organic antimicrobial agents. Schweizer is essentially a review article disclosing the pathology, structure, and mechanism of Triclosan.

Further, contrary to the Examiner's assertion, Schweizer does not teach that "Triclosan is known in the art and used in cementitious composite mixtures." Rather, the only disclosure in Schweizer relevant to Sakai is that "concrete" is mentioned as an extreme example of the "multitude of suggested or actual uses of Triclosan." See Schweizer, page 1, columns 1 and 2. This disclosure alone does not provide a clear rationale for the alleged combination, particularly in view of Sakai's silence as to the use of migratory antimicrobial agents or migratory antimicrobial effect. Accordingly and in view of the above, Applicants submit that one of

ordinary skill in the art would not be motivated to use Triclosan in the composition of Sakai, based on the teachings of Sakai and Schweizer

In view of the above, the Examiner is requested, respectfully, to withdraw the rejection of claims 1-3, 5-12, 14-18, and 24-27 over Sakai, Schweizer or Ramirez.

D. Claims 1-27 have been rejected under § 103(a) as being unpatentable over Sakai, as applied to claims 1-13 and 19-27 above, in view of Appleton. Office Action at pages 12-14.

Initially, Applicants have canceled claims 4, 13 and 19-23 herein, thus the rejection is moot as to these claims.

With regard to present claims 1-3, 5-12, 14-18, and 24-27, Applicants respectfully traverse the rejection over Sakai in view of Appleton for the following reasons.

Applicants respectfully submit that none of the references, either alone or in combination, disclose all of the elements of present claim 1.

As discussed above, Sakai employs inorganic agents that are not soluble in resin and therefore will be disposed on the surface of the composite material. Moreover, Sakai does not teach any migratory antimicrobial effect, much less incurred from an organic antimicrobial agent such as Triclosan. Accordingly, Sakai cannot be said to teach or suggest a composition having antimicrobial agents that can exhibit controlled migration through the polymeric binder as required by present claim 1, and Appleton fails to correct this deficiency for the reasons discussed above in (IV)(A.).

Specifically, there is no suggestion or teaching in Appleton of antimicrobial agent migration. Rather, Appleton only teaches that the outer surface of the polymeric matrix has an antimicrobial effectiveness, which requires continued surface restoration to maintain its effectiveness. See Appleton, column 5, lines 31-35. Thus, one skilled in the art would not be

motivated to use the antimicrobial agent of Appleton in the composition of Sakai because Appleton teaches that the antimicrobial agents are consumed in a short time period.

Furthermore, even when Sakai and Appleton are combined, the presently claimed invention achieves unexpected results over the combination of Sakai and Appleton by having a composition that exhibits antimicrobial migration neither taught nor appreciated by Sakai and Appleton.

In view of the above, the Examiner is requested, respectfully, to withdraw the rejection of claims 1-3, 5-12, 14-18, and 24-27 over Sakai and Appleton.

V. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: January 4, 2010

Product | Silestone® possesses an elegance and beauty comparable only with beautiful and natural stones such as quartz and diamonds.

Product	Maintenance, cleaning and polishing Leather texture Resistance to chemical products Product care
Product	» Product care
Gran Formato a Medida	Do not use Silestone for exteriors or in locations with UV lamps. Over time sunlight can affect the colour and tone of Silestone®.
Advantages	<ul style="list-style-type: none">• Do not use water-repellents or sealants to polish the surface. Silestone®'s sheen. At the time of installation the product has a natural sheen. Sealants and water-repellents create an artificial and temporary sheen.
Maintenance	<ul style="list-style-type: none">• Do not use paint strippers, caustic soda or products with a pH greater than 10.
Colours	<ul style="list-style-type: none">• If you use bleach or a solvent the surface must be rinsed with water; these substances must never be left in permanent contact with the surface.
Certificates	<p>Bleach and solvents could damage the product after 12 hours.</p> <ul style="list-style-type: none">• Do not use chlorine-based products such as dichloromethane (present in paint strippers).• The surface of the material, floors or worktops, must not be repolished.• Do not use grease removers like those used to clean ovens and hobs.• Keep Silestone away from heat sources (deep fat fryers, etc.). <p>Although Silestone® can withstand high temperatures, exposing the product to continuous contact with a heat source or placing hot saucepans, frying pans and deep fat fryers on its surface is not recommended.</p> <p>We recommend using placemats/trivets underneath hot objects.</p> <p>FOR SPECIFIC QUERIES AND TECHNICAL INFORMATION PLEASE CALL US ON 902 44 41 75 or USE THE LINK FOUND IN THE PROFESSIONAL AREA.</p>

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IMAGE

COLLECTIONS

NEW SERIES PRESENTATION

GREEN

Corian® Solid Surface



1. Product name

DuPont™ Corian® Solid Surface

2. Manufacturer

E. I. du Pont de Nemours and Company Inc. (Surfaces division)

European headquarter:
Du Pont de Nemours International
S.A. (Surfaces division)
2, Chemin du Pavillon
P.O. Box 50
CH-1218 Le Grand Saconnex,
Geneva - Switzerland

3. Product description

Basic use

DuPont™ Corian® is an advanced composite product used as a decorative material in a variety of residential and commercial applications. Corian® offers design versatility, functionality and durability. Supplied in sheets and shapes, it can be fabricated with conventional woodworking tools into virtually any design. Corian® is the original solid surface material made only by DuPont. It is widely accepted as a material for countertops, vanity tops, tub/shower walls, kitchen sinks, vanity basins and laboratory bench tops in numerous markets including lodging, healthcare, banks, boutiques, restaurants.

Composition

DuPont™ Corian® is a solid, non-porous, homogeneous surfacing material, composed of $\pm 1/3$ acrylic resin (also known as PolyMethyl MethAcrylate or PMMA), and $\pm 2/3$ natural minerals. These minerals are composed of Aluminium TriHydrate (ATH) derived from bauxite, an ore from which aluminium is extracted. For more information on the composition of the material, please consult the Corian® Material Safety Data Sheets (MSDS) available via the msds.dupont.com site or via your local supplier.

Standard products

DuPont™ Corian® Sheets

Available in various standard thicknesses, easily cut to size by professional fabricators. All colours in the standard colour palette are available in 12 x 760 x 3658 mm sheets.

Some of these colours are also available in various other sizes.

Some standard dimensions of DuPont™ Corian® sheets are:

- 4 mm sheet: 930 x 2490 mm
- 6 mm sheet: 760 x 2490 mm
930 x 2490 mm
- 12 mm sheet: 760 x 3658 mm
930 x 3658 mm
- 19 mm sheet: 760 x 3658 mm

Check with your supplier for the latest product offering.

DuPont™ Corian® Shape Products

A wide range of DuPont™ Corian® shapes, made using injection moulding technology, is available in

4 solid colours for custom integration with Corian® sheets to create an entire, continuous surface. This includes vanity basins in solid colours for bathrooms, and single and double sinks for kitchens, bars and small wash-up areas, hospitals and laboratories. Seamed undermounting technique eliminates rims that trap dirt and water, minimising cleaning and maintenance and providing improved hygiene. Care, maintenance and installation instructions are included in the packaging. Appropriate accessory products, including installation hardware, are available and recommended for residential kitchens only.

The colours of Corian®

The colours of Corian® allow for an almost unlimited working palette. You can choose a single colour; a neutral basis for design; or experiment with eye-catching harmonies. DuPont™ Corian® can also be used as inlays, accents, or as a versatile complement to other materials like metal, wood, stone, etc.

For complete information on colours, refer to the latest leaflet about the colours of Corian® or to the www.corian.com website. Hues, patterns and textures are related by style and character. Dark, heavily pigmented colours of Corian® will show scratches, dust and ordinary wear and tear more readily than lighter, textured colours. These colours are recommended for applications where surface contact is light or for use as inlays and accent colours.



corian.

Custom sheets

DuPont can manufacture Corian® sheets in custom colours, patterns and dimensions, within manufacturing capability limits and based on a minimum order quantity.

Limitations

Contact a local specialist, distributor or fabricator of Corian® or the Information Centre for DuPont™ Corian®. Although DuPont™ Corian® can withstand high temperatures, it should be protected with hot pads or heat shields against direct heat.

Use of 4 mm and 6 mm sheets should be restricted to vertical applications or certain furniture applications only. The choice between 12 mm and 19 mm is generally based on performance and cost considerations.

Due to the complex blending of natural minerals and man-made acrylics, slight colour variations may be found within a sheet or from sheet to sheet of same colour. Therefore, checking for colour matching is an essential element of sheet inspection before starting fabrication.

DuPont™ Corian® is non-porous so spills and stains will not be absorbed into the material. However, some chemicals can stain, discolour or damage the surface of Corian®. These chemicals include strong acids (like concentrated sulphuric acid), ketones (like acetone), chlorinated solvents (like chloroform) or strong solvent combinations (like paint remover). The extent of the damage will depend on the length of contact. Except for paint remover, short periods of contact will not usually cause severe damage to Corian®. Acid drain cleaners should not be used as they can damage both Corian® and any plastic plumbing beneath. Corian® is not recommended for use in photographic processing laboratories. More information can be found in the section "Chemical Resistance of Corian® Products". In some hospitals and laboratories where strong disinfectants come in contact with

DuPont™ Corian®, it is recommended that solid colours are used and extended contact is avoided.

4. Performance properties and characteristics

Typical performance properties of DuPont™ Corian® are shown in Table 1. The performance of Corian® sheets may vary according to the thickness of the material (4 mm, 6 mm, 12 mm or 19 mm), its aesthetics and surface finish.

Since its introduction in 1967, DuPont™ Corian® has proven itself to be remarkably durable, versatile and easy to live with in both the home and commercial environments.

Colours and patterns run through the entire thickness of the material and cannot wear away or delaminate. Joints can be glued inconspicuously, making virtually unlimited surfaces possible.

Surfaces in Corian® are renewable, meaning they can be fully restored with ordinary mild abrasive cleansers and a scouring pad. Cigarette burns, for example, can be easily removed in this way. Damage caused by abuse can usually be repaired on site without having to completely replace the material.

DuPont™ Corian® surfaces are hygienic. Because it is a non-porous material, bacteria and mould cannot be trapped and proliferate in its joints, nor underneath the surface.

Corian® is an inert and non-toxic material. Under normal temperature conditions, it does not emit gases. When burned, it releases mainly Carbon Oxides and the smoke generated is optically light and does not contain toxic halogenated gases. Because of these properties, Corian® is used in public spaces and delicate applications such as airport check-in counters, wall and work surfaces in hospitals and hotels.

DuPont™ Corian® can be thermoformed in wooden or metal moulds at controlled temperatures in order to create various 2D and 3D

design objects. Embossing effects can also be created using Bas Relief technique.

The translucency of DuPont™ Corian® is especially striking in the lighter colours as well as in thinner sheets. Many designers are using it to create lamps or lighting effects in various applications. The new colour family, called as Translucent Series, consists of 6 colours in 6 mm and 12 mm sheets featuring enhanced translucency to be used to create special lighting effects.

Inlaying DuPont™ Corian® with different materials or with different colours of Corian® is possible and can enhance the inherent beauty of the material. Inlays and logos can also be created on Corian® using dye sublimation or direct printing techniques.

5. Fabrication and installation

Detailed information on the fabrication and installation of DuPont™ Corian® is available in the fabrication and installation booklets on Corian® as well as in technical bulletins.

Seams

To minimise material usage and facilitate installation, a corner block of Corian® should be made square (butt) rather than mitred. The edges to be joined should be straight, smooth and clean. Some seams need to be reinforced (see fabrication manual for details). Joints should only be made with "Joint Adhesive for DuPont™ Corian®". Cutouts should be made with a router equipped with a sharp carbide bit, with a minimum diameter of 10 mm. All corners of a cutout must be rounded to 5 mm radius and the edges smoothed, both on top and bottom, all around a cutout. "L" and "U" shaped corners need smooth, 5 mm radius inside corners. For hob cutouts, corners should be reinforced with a Corian® corner block. See fabrication manual for more details.

Some colours of Corian® that feature random veins and irregular patterns require special considerations regarding

the seams. Please refer to the related technical bulletin for best practices in fabrication of these colours.

Sealants and adhesives

Corian® is compatible with many commercially available caulks and sealants. However, the specially developed silicone sealant sold by DuPont or its distributors is recommended for best performance and colour match. Vertical panels of Corian® may be installed over suitable substrates, including water-resistant gypsum board, marine-grade plywood and ceramic tiles. In case a support is needed, apply perimeter frame or full support direct to Corian® using large beads of flexible adhesive leaving a space with a minimum thickness of 1.5 mm.

For making seams in countertops, repairs and custom edges, "Joint adhesive for Corian®" in matching colour should be used. When used in accordance with manufacturer's instructions, it provides a smooth and inconspicuous joint. Joint adhesive for Corian® is available from DuPont or its distributors.

Clearances

The minimum expansion clearance for Corian® is 35×10^{-6} x (length of the piece of Corian®) x (biggest temperature range expected in °C) in mm. Joints to be caulked should be approximately 1.5 mm wide to allow satisfactory caulk penetration and expansion.

Precautions

Product dimensions are nominal. If tolerances are critical, review your needs with a specialist of Corian®.

6. Availability and cost

Availability

DuPont™ Corian® and accessory products are readily available through a worldwide network of Distributors and certified Fabricators/Installers. Please check the Yellow Pages or call the Information Centre for DuPont™ Corian® for the name of a local distributor.

Cost

Cost varies with thickness and width as well as custom fabrication and installation details. Contact the Information Centre for DuPont™ Corian® for the names of certified Dealers, Fabricators/Installers, who can supply price information.

7. Warranty

Ten-year warranty DuPont offers Corian® with two levels of warranty protection. The limited "Product" warranty is standard for all Corian® products and ensures that all products will be free from manufacturing defects for a period of 10 years after purchase. A higher level of protection, the 10 year limited "Installed" warranty, is available through fabricators member of the "Corian® Quality Network". This "Installed" warranty expands the "Product" warranty to ensure that both the fabrication and the installation of the finished product will be free from defect. With two levels of warranty protection available, you can value engineer warranty coverage for each project. Feel free to discuss your needs with a local specialist of Corian®.

8. Maintenance

Preventing damage to Corian®

Avoid prolonged exposure to strong chemicals such as acids, bases, and organic solvents. Spills should be cleaned up promptly. Refer to Table 3 for additional details regarding chemical exposures, clean up, and general maintenance. In case of exposure outside the specifications listed in the Class I Reagents section, the 10 year limited product warranty will be void and handled as a case of abuse. While unaffected by minor impacts, Corian® can be damaged by heavy impacts, especially from pointed objects. Corian® can also be damaged by excessive heat. A local specialist of Corian® can help you include appropriate heat management into your designs.

Repairing Corian®

DuPont™ Corian® provides superior value by being inconspicuously repairable in most cases. Minor cuts, scratches, and stains can be removed by owners using fine sandpaper and Scotch-Brite™ pads. Deeper cuts or impact damage such as cracks may require a licensed service centre or a Corian® Quality Network member to make inconspicuous repairs.

9. Technical services

There is a Technical Support Team for Europe, Middle East and Africa.

10. Additional information

DuPont has many bulletins which give additional information about Corian® and its properties, including removal of radioactive compounds and HIV (AIDS virus) in healthcare facilities, as well as weatherability and VOC rating. Also available are bulletins, which detail fabrication, installation, repair, and proper use of accessories.

11. Legal

This information corresponds to our current knowledge on the subject.

It is offered solely to provide possible suggestions for your own experimentation. It is not intended, however, to substitute for any testing you may need to conduct to determine for yourself the suitability of our products for your particular purposes. This information may be subject to revision as new knowledge and experience becomes available, since we cannot anticipate all variations in actual end-use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent right.

Table 1: performance properties of DuPont™ Corian® products

PROPERTY	TEST METHOD	TYPICAL RESULTS		UNITS	*
		6 mm sheet	12 mm sheet		
Density	DIN ISO 1183	1.73 – 1.76	1.68 – 1.75	g/cm³	1
Flexural modulus	DIN EN ISO 178	8920 – 9770	8040 – 9220	MPa	1
Flexural strength	DIN EN ISO 178	49.1 – 76.4	57.1 – 74.0	MPa	1
Elongation at break	DIN EN ISO 178	0.58 – 0.94	0.76 – 0.93	%	1
Compressive strength	EN ISO 604	178 – 179	175 – 178	MPa	1
Resistance to impact (spring load)	DIN ISO 4586 T11	> 25	>25	N	1
Resistance to impact (ball drop)	DIN ISO 4586 T12	> 120	>120	cm	1
Surface hardness (Mohs index)	DIN EN 101	2-3	2-3		1
Resistance to surface wear	DIN ISO 4586 T6	63 – 75	58 – 63	Lost weight mm³/100 rev.	1
Resistance to boiling water-increase in weight	DIN ISO 4586 T7	0.1 – 0.7	0.1 – 0.3	%	1
Resistance to boiling water-surface change	DIN ISO 4586 T7	No visible change	No visible change		1
Dimensional stability at 20°C	DIN ISO 4586 T10	< 0.16	< 0.16	% change in length	1
Resistance to dry heat-180°C	DIN ISO 4586 T8	4-5 slight change	4-5 slight change		1
Lightfastness (Xenon arc)	DIN ISO 4586 T16	> 6	> 6	Blue wool scale	1
Anti-slip properties-with 100 µm	DIN 51130:1992-11	5.8° – do not pass R9 requirement (6° min)		° angle	2
Anti-slip properties-with 120 µm	DIN 51130:1992-11	7.6° – pass R9 requirement (6° min)		° angle	2
Anti-slip properties-with 150 µm	DIN 51130:1992-11	8.1° – pass R9 requirement (6° min)		° angle	2
Resistance to bacteria and fungi	DIN EN ISO 846	Does not support microbial growth			3
Electrostatic surface behaviour	DIN IEC 61 340-4-1		> 1 x 10"	Ω	4

(1) test report Q IWQ MBL 733 1785-1 (for classification according to DIN EN 438 part 1 & 7) from LGA –Germany/04-2004

(2) test report BMW 0411048-03 from LGA-Germany/03-2004

(3) test report 5642219 from LGA-Germany 03/2004

(4) test report EMA-SMG-814 1131 IWQ-MBL 734 1109 from LGA-Germany/03-2004

Table 2: fire properties of DuPont™ Corian® products

PROPERTY	STANDARD	CLASS/ RESULTS	PRODUCT	Type/Area of application	*
Euroclass for Reaction to fire	EN 13501-1	C-s1,d0	Standard grade, all colours, 6 & 12mm	With any substrate of A2 or better fire performance	1
Euroclass for Reaction to fire	EN 13501-1	C-s1,d0	Standard grade, all colours, 12mm	On a substrate with a fire performance of D or better. (wood based substrate)	2
Euroclass for Reaction to fire	EN 13501-1	B-s1,d0	FR grade colours, 12mm	With any substrate of A2 or better fire performance	3
Euroclass for Reaction to fire	EN 13501-1	B-s1,d0	FR Grade, GW, 12mm	Applied on aluminium profiles with a gap of 50mm	4
Euroclass for Reaction to fire	EN 13501-1	B-s1,d0	Standard grade, GW, 12mm, 930mm wide	Applied on aluminium profiles with an airgap and with mineral wool insulation	5
Euroclass for Reaction to fire	EN 13501-1	B-s1,d0	Glacier Ice, 6mm (Illumination series)	Installed with an airgap in the back	6
Fire behaviour	BS 476 part 6&7	Class 0	FR grade, GW, 12mm	Not specified (material test)	7
Flammability test	DIN 4102-1	B1	FR Grade, Genesis colours	With a distance of >40mm from other materials	8
Reaction to fire - M Classification	NF P 92-501	M2	Standard Grade, 12mm	Not specified (material test)	9
Reaction to fire - M Classification	NF P 92-501	M2	CW, 6mm	Not specified (material test)	10
Smoke index - F Classification	NF F 16-101	F0	CW, 6 & 12mm	Not specified (material test)	11
Calorific potential	EN ISO 1716	9.15 KJ/g	12mm, CW	Not specified (material test)	12
Fire test - Aviation	JAR/FAR - AITM	Pass	FR Grade	Aviation	13
Fire test - Railroad	DIN 5510-2 / DIN 54837	S 4, SR 2, ST 2	12mm	Railroad vehicle	14
Smoke toxicity	DIN 5510-2 / EN ISO 5659-2	Pass	12mm	Railroad vehicle	15

(1) classification report E131025 from Warrington Fire Research-UK/03-2003

(2) classification report 13126E from Warringtonfiregent-Belgium/02-2008

(3) classification report E131024 from Warrington Fire Research-UK/03-2003

(4) classification report 13448C from Warringtonfiregent-Belgium/12-2008

(5) classification report 13700C from Warringtonfiregent-Belgium/03-2009

(6) classification report 230006665 from MPA NRW-Germany/09-2008

(7) test reports 154054 & 154053 from Warringtonfire-UK/09-2006

(8) test report 230005623 from MPA NRW-Germany/2006

(9) classification report 14540-09 from SNPE-France/04-2009

(10) classification report 1226105 from SNPE-France/05-2005

(11) classification reports 11625-04 & 12261-05 from SME/SNPE-France/03-2004 & 05-2005

(12) test report 11624-04 from SNPE-France/03-2004

(13) test report 05-0530 from Fire Test Laboratory Airbus Deutschland GmbH - 2005

(14) test report P60-08-0018 (test according to DIN 54837, classification according to DIN 5510-2) from RST-Germany/01-2008

(15) test report P60-08-3107 (test according to EN ISO 5659, evaluation according to DIN 5510-2) from RST-Germany/02-2008.

Chemical resistance of DuPont™ Corian® products

CLASS I reagents

The following reagents show no permanent effect on Corian® sheet when left in contact for periods of 16 hours.

The chemical residues can be removed with a wet Scotch-Brite™ pad and bleaching cleanser. Sometimes, minimal effects have been observed, particularly those indicated by footnotes (*).

Table 3: CLASS I reagents

<ul style="list-style-type: none"> • Acetic Acid (10%) • Acetone** • Acrodine Orange • AG Eosin Blue (5%) • AG Gentian Violet • Ammonia (10%) • Ammonium Hydroxide (5, 28% **) • Amyl Acetate • Amyl Alcohol • Aromatic Ammonia • Ball Point Pen • Benzene** • "Betadine" Solution • Bite Registration Accelerator (2% Eugenol) • Bite Registration Base • Bite Registration Mix (50/50) • Bleach (Household Type) • Blood • B-4 Body Conditioner • Butyl Alcohol • Carbon Disulphide • Carbon Tetrachloride*** • "Cavity" in Phenol • Citric Acid (10%) • Caulk IRLM (with or w/o ZnO) • Calcium Thiocyanate (78%) • Cigarette (Nicotine) • Coffee • Cooking Oils • Copalite Intermediary Varnish • Cotton Seed Oil • Crystal Violet • Cupra Ammonia • Debacterol • Dimethyl Formamide • Dimethylene Blue • Dishwashing Liquids/Powders • "Dry Bond" Dental Adhesive • Eosine • Equalizing Accelerator (23% Eugenol) • Equalizing Base • Ethyl Alcohol (Ethanol)** • Ethyl Acetate 	<ul style="list-style-type: none"> • Ethyl Ether** • Eucalyptol • "Eugenol" (with or w/o ZnO) • Ferric Chloride • "Fisher" Formaldehyde (40%) • Food Colouring • Formaldehyde • Gasoline • Gentian Violet • Hair Dyes • Household Soaps • Hydrochloric Acid (20, 30%) • Hydrogen Peroxide • Introfiant Arterial Chemical • Iodine (1% in alcohol)*** • "Kelviscera" Cavity • Kerosene • Ketchup • Lemon Juice • Lipstick • Liquid shoe polish • "Luralite" Accelerator (16% Eugenol) • "Luralite" Base • Lye (1%) • "Lysol" Brand Cleaner • Mercurochrome (2% in water)*** • Methanol** • Methyl Ethyl Ketone • Methyl Orange (1%) • Methyl Red (1%) • Mineral Oil • Munsel's Solution • Mustard • Nail Polish • Nail Polish Remover (Acetone) • Naphthalene (Naphtha) • Neotopanel • n-Hexane • Nitric Acid 6% • Olive Oil • Pencil Lead • Perchloric Acid • Permaflow Preinjection • "Permaglow" Arterial Fluid • Permanent Marker Ink • Peroxide 	<ul style="list-style-type: none"> • Phenolphthalein (1%) • Phosphorus Pentoxide • Picric Acid • "Procaine" • Potassium Permanganate (2%) • Restorative Anti-dehydrant • Saffron • Salt (Sodium Chloride) • Shoe Polish • Silica Dental Cement (liquid) • Silver Nitrate (10%) • Soapless Detergents • Sodium Bisulphate • Sodium Hydroxide Solution (5, 10, 25, 40% **) • Sodium Hydroxide Flake** • Sodium Hypochlorite (5%) • Sodium Sulphate • Solitine solvent • Soy Sauce • Sugar (Sucrose) • Sulphuric Acid (25, 33, 60%) • Tannic Acid • Tea • Tetra Hydrofuran • Tetramethyl Rhodamine Isothiocyanate • "Thymol" in Alcohol • Tincture of Iodine • Tincture of Mercurochrome • Tincture of Merthiolate • Toluene*** • Tomato Sauce • Trichloroethane • Trisodium Phosphate (30%) • Trypan Blue • Urea (6%) • Uric Acid • Urine • Vinegar • Washable inks • Wine (all varieties) • Wright's Stain • Xylene • Zephiran Chloride • Zinc Chloride • Zinc Oxide (paste, ointment)
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* May cause surface etching or deglossing after 16 hours exposure

** May cause slight lightening after 16 hours exposure

*** May cause slight darkening after 16 hours exposure.

CLASS II reagents

Corian® is not recommended for working areas where CLASS II reagents may come in contact with Corian®.

The 10 Year Limited Installed and Product warranty does NOT apply where class II reagents come in contact with Corian®.

The occasional stain that might result from inadvertent exposure to Class II reagents can often be removed. Scrubbing with household cleanser will remove light stains. More stubborn surface stains will require sanding with fine to coarse sandpaper.

The following residues may require sanding for complete removal:

- Acetic Acid (90, 98 %)
- Acid Drain Cleaners
- Aqua Regia Cleaner
- Chlorobenzene
- Chloroform (100 %)
- Chromic Trioxide Acid
- Cresol
- Dioxane
- Ethyl Acetate
- Equalizing Mix (50/ 50)
- Formic Acid (50, 90 %)
- Furfural
- Glacial Acetic Acid
- Giemsa
- Hexaphene Autopsy/Viscera Treatment
- Hydrofluoric Acid (48 %)
- Luralite Mix (50/ 50)
- Methylene Chloride-Based

Products

- Paint Removers
- Brush Cleaners
- Some Metal Cleaners
- Nitric Acid (25, 30, 70 %)
- Phenol (40, 85 %)
- Phosphoric Acid (75, 90 %)
- Photographic Film Developer (used)
- Sulphuric Acid (77, 96 %)
- Trichloroacetic Acid (10, 50 %)

Specialised products

Biochemistry staining agents in most instances will stain Corian® after a few minutes' exposure. However, the stains are generally removable by prompt scrubbing with acetone as indicated below.

- Giemsa
- Trypan Blue - Stains removed with acetone
- Acridine Orange
- Safranin
- Crystal Violet - Stain incompletely removed with acetone

The following dental treatment materials will degloss, etch, or slightly stain Corian® Surfaces. Affected areas may be restored by scrubbing with a Scotch-Brite™ cleaning pad.

- Copalite Intermediary Varnish
- Caulk IRM (with or without ZnO)
- Eugenol (with or without ZnO)
- Luralite accelerator (16 % Eugenol)
- Luralite base
- Solitine solvent

- Equalizing accelerator (23 % Eugenol)
- Equalizing base
- Bite registration base
- Bite registration accelerator (2 % Eugenol)
- Bite registration mix (50/50)

Stains caused by the following dental treatment materials may require light to moderate sanding for removal:

- Luralite mix (50/50)
- Equalizing mix (50/50)

Note:

- Products that are not listed may be similar to the ones that are. Please compare the ingredients listed on their label or in their Material Safety Data Sheet to the ones mentioned.
- The published data are for 16 hours exposure time. In reality exposure can be much longer. A leaking hand-soap dispenser may cause a liquid puddle under it for weeks and months. Similarly some containers have poorly designed spouts/caps from which product leaks every time they are used, so that they stand constantly in their spill. If needed, a drip cup or a spill tray in a suitable material would address these situations.
- The resistance to staining of Joint Adhesive is slightly less than that of Corian® sheet and shape.
- Our draining accessories are recommended for residential kitchens only!

Scotch-Brite™ is trademark of 3M.

For more information, please visit our web site:

www.corian.com



The miracles of science™



QUARTZ IN YOUR HANDS



SILESTONE

SILESTONE ARCHITECTURAL



COSENTINO

Cosentino is a Spanish company whose activity is focused on the design, production and distribution of architectural and decorative solutions using natural stone products. We create first-class products to provide innovative, practical solutions for the home and community, in accordance with the strictest design, innovation and environmental criteria.

Cosentino's business activity includes the complete natural stone production process, from the extraction and transformation processes to the installation of flat surfaces, such as kitchen worktops and bathroom surrounds, coatings and other elaborate products.



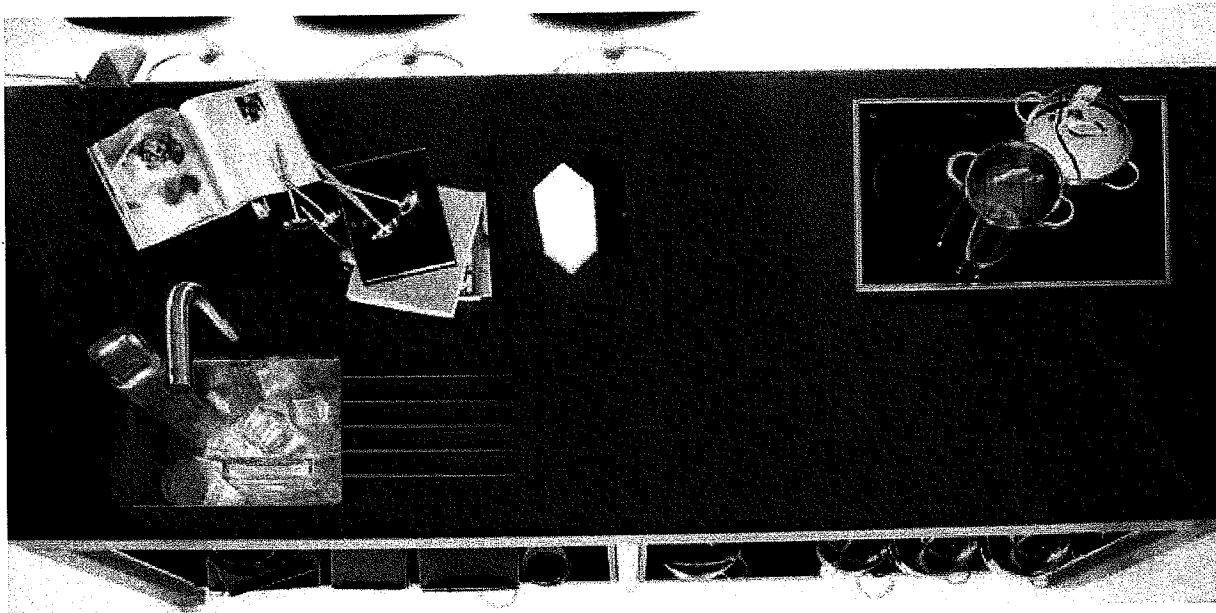


SILESTONE®

Silestone® is a registered trademark of Cosentino S.A., world leader in the production of quartz surfaces, and the number one company in sales of worktops to the USA and Western Europe.

Silestone® is a design surface that has been on the market for more than 15 years. It assures maximum quality and assurance through an after-sales service that only a world leader is capable of offering.

Look out for the Silestone® logo on our products! This is the only guarantee that you are receiving Silestone® Quartz, with all the excellence and quality assurance that you can expect from us.



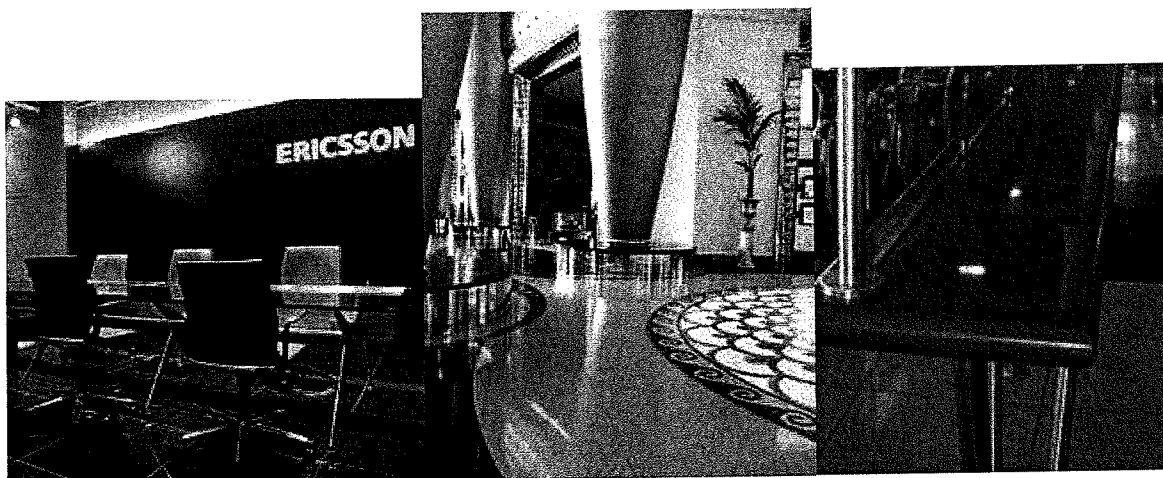
Silestone® is the leading international name in quartz surfaces.

Thanks to Cosentino's large sales network, the Silestone® trademark can be found in any part of the world.

Silestone®, with its sophisticated appearance and colour consistency, is a unique product that encompasses the qualities you would expect from natural stone with all the additional benefits that only a world leading quartz manufacturer can provide.

94% of Silestone® is natural quartz which is one of the most resistant and attractive natural elements that exist. Silestone® makes it possible to create anything from beautiful kitchen worktops through to the most innovative commercial projects.

Silestone® is the result of an innovative technological project executed by Cosentino, a world leader in the natural stone sector, with more than 75 years' experience in the industry

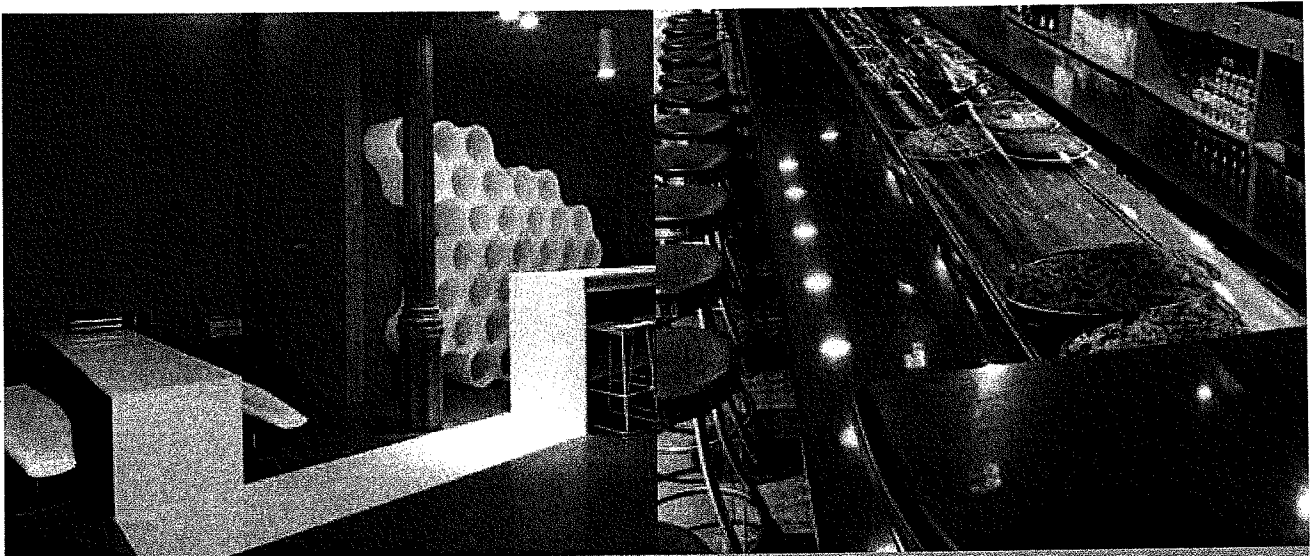




APPLICATIONS

The natural beauty of Silestone®, together with its unbeatable physical and technical features, make it the perfect material for use in a wide range of commercial and domestic applications.

Applications include bar and food serveries, counters and reception desks, kitchen worktops, bathroom and washroom vanities, floor and wall tiles and step treads.

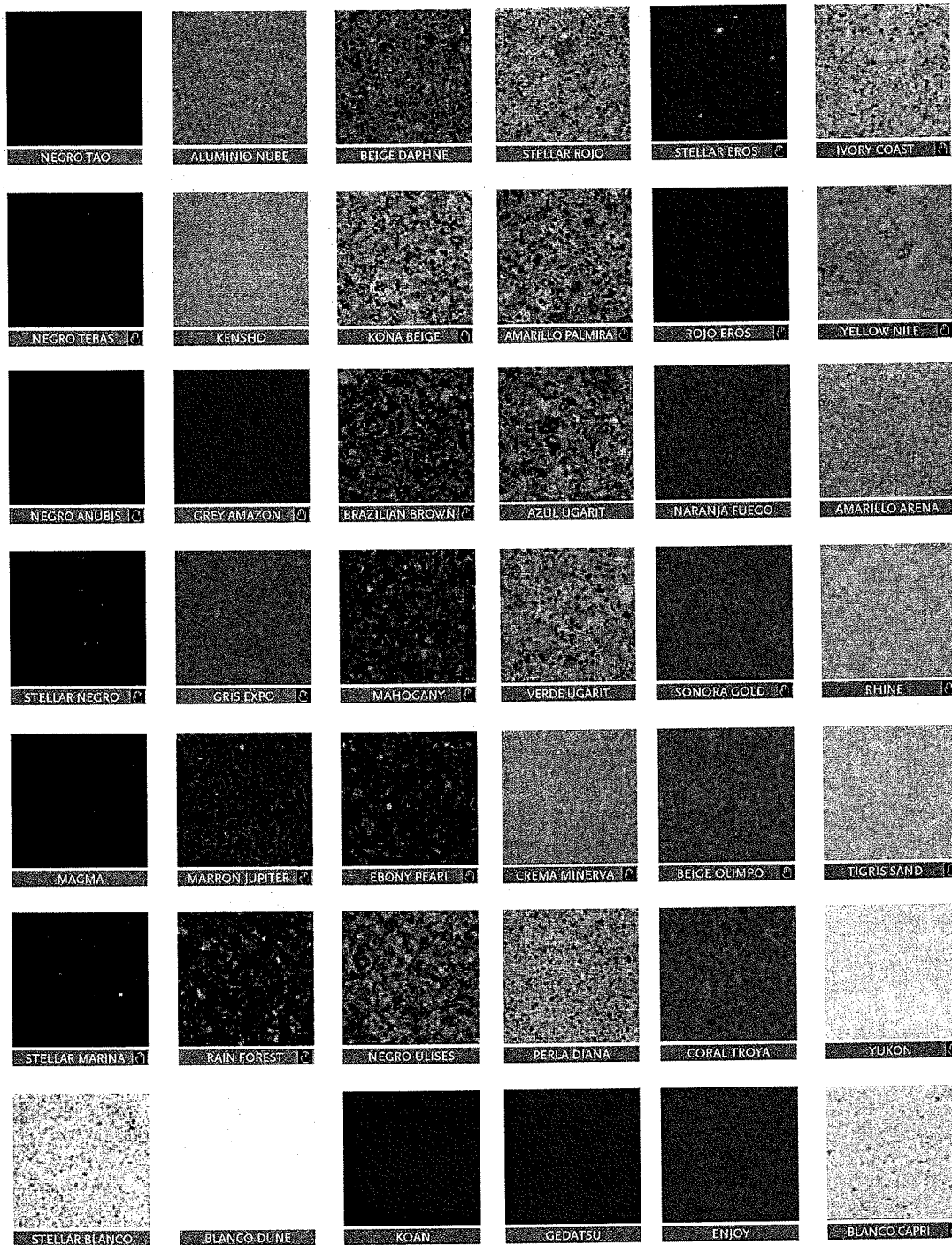


BAR COUNTERS
RESTAURANT SERVERIES
KITCHENS AND BATHROOMS
RECEPTION COUNTERS
FLOORING
RETAIL STORES
HOTELS
LEISURE CENTRES
AIRPORTS
HOSPITALS
STADIUMS
MUSEUMS



Silestone Collection 09

COLOURCHART



SILESTONE® TILES ARE AVAILABLE IN THE FOLLOWING SIZES.

OTHER SIZES CUT TO REQUIREMENTS ARE AVAILABLE ON REQUEST.

STANDARDS
TILES SIZES

60 x 60 cm
60 x 30 cm
40 x 40 cm
60 x 40 cm
30 x 30 cm

LARGE SIZE TOPS
WITHOUT JOINTS

WIDTH FROM 138 CM
TO 161 CM
LENGTH FROM 304 CM
TO 327 CM

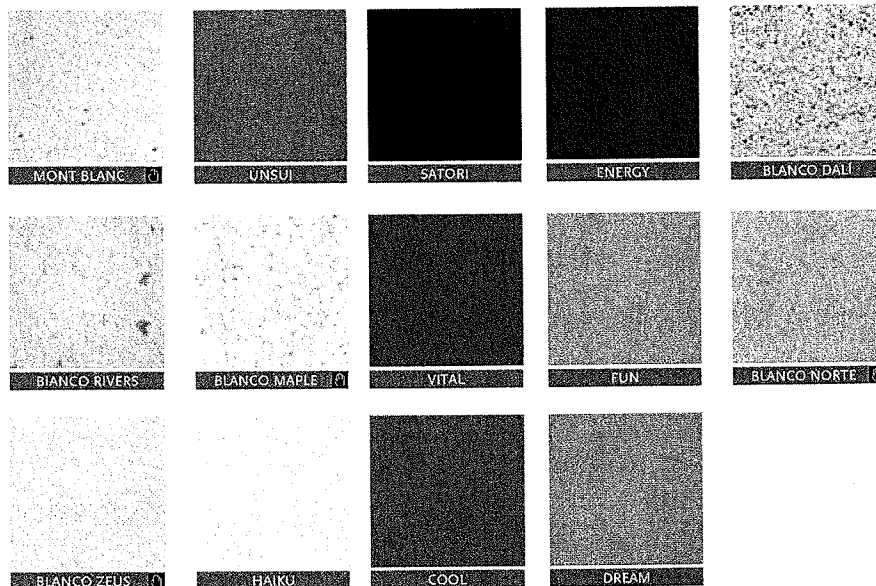
THE LARGER SIZES ARE
RESTRICTED TO CERTAIN
COLOURS



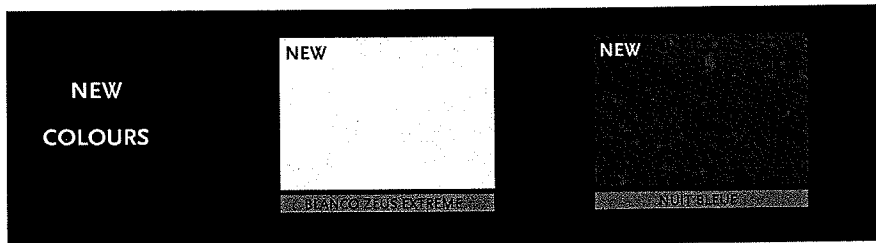
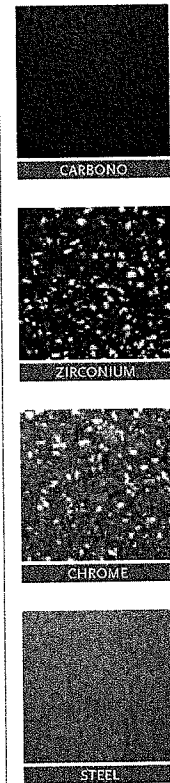
COLOURS AVAILABLE
WITH LEATHER TEXTURE

THICKNESSES: 1,2 / 2/ 3 CM.

TO OBTAIN A REAL IDEA OF THE
MANY COLOURS AVAILABLE, WE
RECOMMEND YOU ASK FOR A
SAMPLE



PLATINUM SERIES



CERTIFICATIONS

100% COMMITTED TO THE ENVIRONMENT

Silestone® is internationally certified to guarantee maximum hygiene and environmental protection.



This certificate ensures that Silestone® does not generate any substance considered to be harmful to the environment, it also guarantees air quality in this way, Silestone® contributes to a high level of environmental protection.



UNE- EN- ISO 14001:2004 STANDARD

The Cosentino environmental management certificate. This certifies a good performance and the continuous environmental improvement of the Cosentino productive processes. Specifically, the efficient use of raw materials, the control of emissions to the atmosphere, residue control, systems of treatment and re-use of industrial water, the disposal of chemical substances and the control of environmental risks.



NSF Creditation accredits Silestone® as a "Safe material for direct contact with food".

It is issued by NSF an american organization that certifies health and hygiene. It is guaranteed by widely-respected organization such as the FDA and the WHO (World Health Organization)



Microban® guarantees an antibacterial protection in all Silestone® products.

A revolutionary treatment that guarantees a maximum hygiene.



Cosentino has obtained the 'Hygiene Tested' LGA certificate for Silestone® worktops. This certificate is given only to products that have ensured high levels of hygiene during its manufacture process and they fulfill all regulated microbiological requirements.

This certificate give the assurance to consumers that antibacterial Silestone is a safe and high quality product'



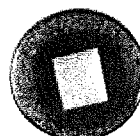
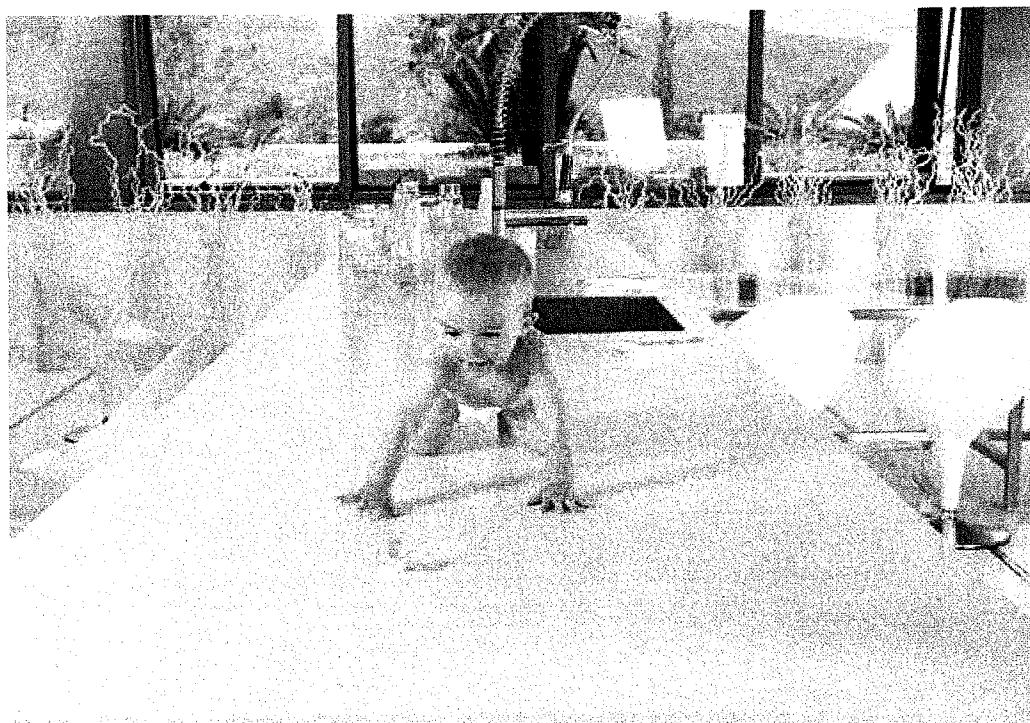
100% ANTIBACTERIAL

ANTIBACTERIAL PROTECTION

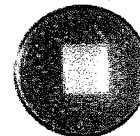
Silestone® is the first and only quartz surfacing material in the World with patented Microban® antibacterial protection. This helps fight growth of micro organisms and harmful bacteria which may be on the surface such as E-coli, Salmonella, Listeria, Staphilococcus and the MRSA superbug

The Microban® anti bacterial technology is incorporated throughout the structure of all Silestone Quartz products during the manufacturing process providing continuous antibacterial protection which cannot be removed or eliminated during the lifetime of the product.

Silestone® with its ideal physical and aesthetic characteristics when combined with the Microban® antibacterial protection, makes it a near necessity for Architects, Designers and their clients who require a demanding standard of specification for areas where high levels of hygiene are required.



with microban



without microban



WHAT IS THE TECHNOLOGY?

- The Microban is evenly distributed throughout the material, including the surface.
- Microban protects the entire surface area even in hard to reach corners.
- The Microban active ingredients will not wash or wear out and will last for the lifetime of the product.
- If the Microban active ingredient is neutralised for any reason more active ingredients diffuse to the surface thereby replenishing the protection.
- When bacteria come into contact with the surface the Microban active ingredients affects the bacterial cells in many ways thereby making them unable to grow or reproduce.

Microban® protection does not replace the need for regular cleaning and does not protect against food borne illnesses.



100% PEACE OF MIND



100% ANTIBACTERIAL

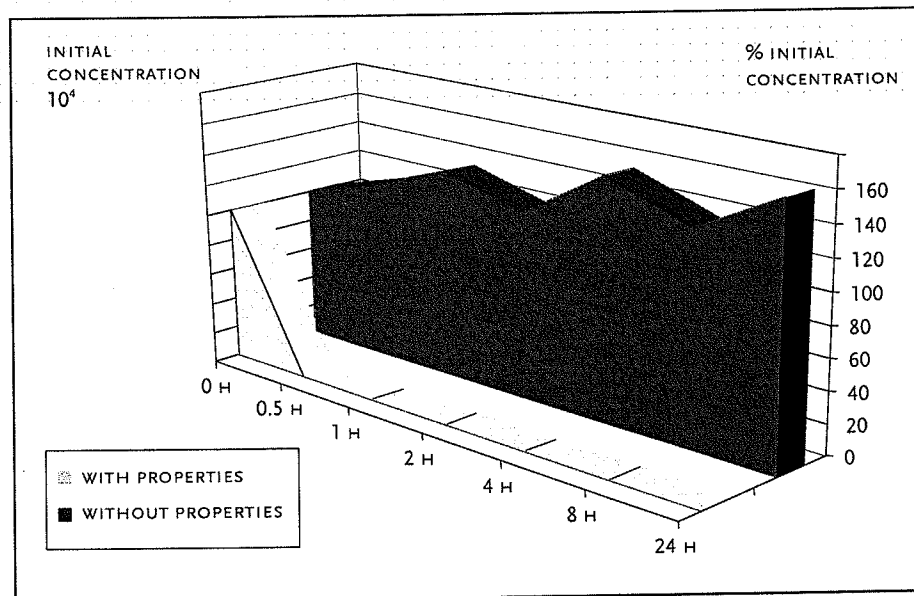
CONTINUOUS PROTECTION

The graph below demonstrates the reduction of harmful and odour-causing bacteria:

Both surfaces were inoculated with bacteriam then bacteria counts were taken periodically over a twenty four hour period.

After one hour, the surface with Microban protection showed significant reduction in bacteria whilst the surface without protection grew by over ten-fold.

Over a twenty four hour period the bacteria on the surface with the Microban protection was reduced to near zero while the surface without the protection increased by one million times.



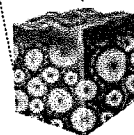
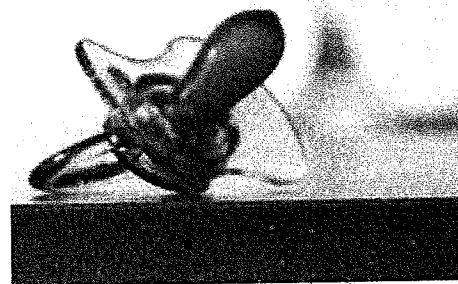
MAXIMUM PROTECTION

The highest level of commitment to enviromental protection and hygiene control.

Silestone® is certified internationally to guarantee and offer of full commitment to food safety and environmental protection.

- NSF certification accredits Silestone® as "a safe material for direct contact with food". It is issued by NSF, an American organization that certifies health and hygiene. It is guaranteed by widely-respected organization such as the FDA and th WHO (World Health Organisation)

- GREENGUARD certificate. This certificate ensures that Silestone® does not generate any substance considered to be harmful to the environment, it also guarantees air quality. In this way, Silestone® contributes to a high level of environmental protection.





SLAB FORMATS

Silestone® is manufactured in slab format in standard size 304 x 138 cm in three different thicknesses; 1.2, 2.0 and 3.0 cm.

Larger size slabs in size 327 x 161 cm are also available in certain colours. Please enquire for further details.

FABRICATED SURFACES

Fabricated items are produced on a bespoke basis to suit your requirements. To receive budget costings for specific projects please forward details of your requirements, in the form of a drawing, to our Head Office at the contact details as shown on the back page of this brochure. Please indicate colour, thickness and edge detail required.

STANDARD TILES

Silestone tiles are available in the following standard 12mm thickness formats:

30 x 30 cm 60 x 40 cm
40 x 40 cm 60 x 30 cm
60 x 60 cm

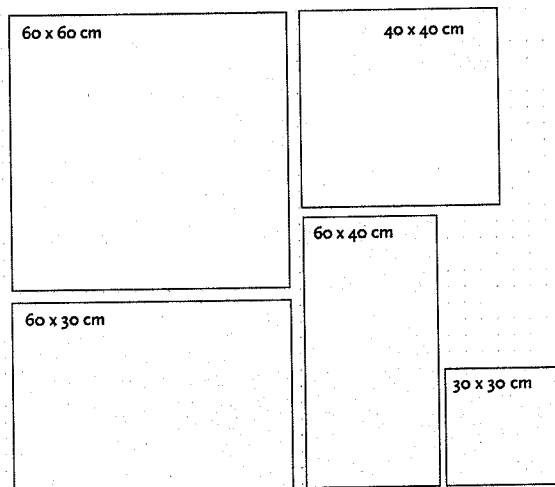
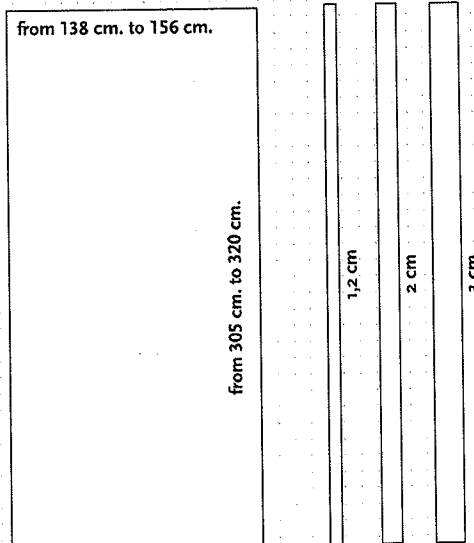
20mm thickness and other format tiles can be made available on request

SAMPLE REQUIREMENTS

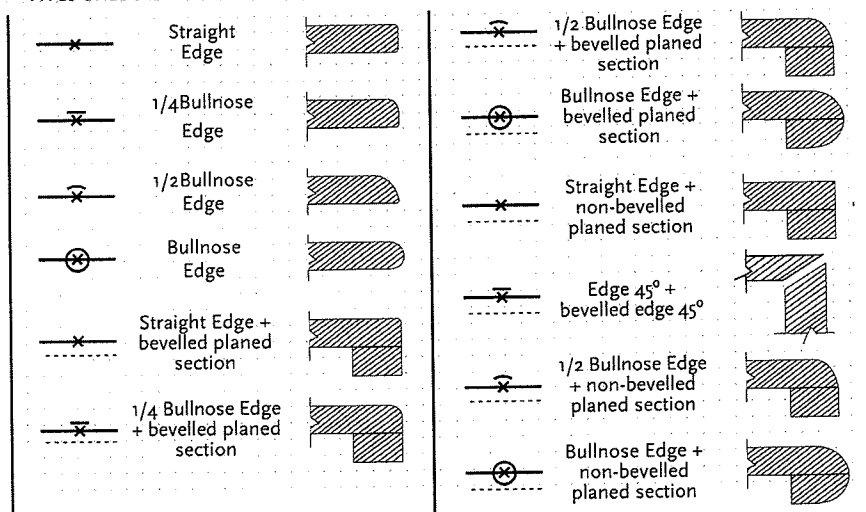
If you wish to receive sample please forward your request through to Cosentino Architectural on the following numbers

Telephone: 08700 118 788
Fax: 01483 757 720
e-mail: info@cosentinouk.co.uk

THICKNESSES



TYPES OF EDGES



FORMATS & SIZES

CHARACTERISTICS

NATURAL BEAUTY

Silestone's natural beauty and depth of finish, combined with its exceptional physical characteristics, make it an ideal material for use in a wide variety of commercial and domestic applications.

RESISTANCE TO STAINING

Silestone® is virtually non porous with a water absorption level averaging 0.15% making it highly resistant to staining caused by coffee, wine, lemon juice, olive oil, vinegar, make up and many other everyday products (see table opposite).

No form of sealing is required for Silestone and cleaning is generally a simple process undertaken with warm water and mild householder cleaner (eg Cif)

RESISTANT TO SCRATCHING

Given the 93% level of quartz used in production, Silestone® ranks 7th in the MOHS scale of hardness (diamond is ranked 10th) thereby making it highly resistant to scratching.

As no surface is indestructible it is recommended that chopping boards are used in kitchen environments.

SHOCK-RESISTANT

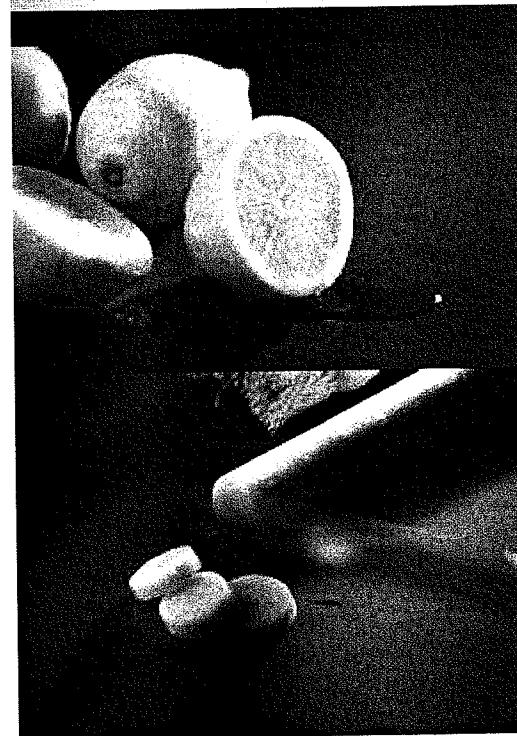
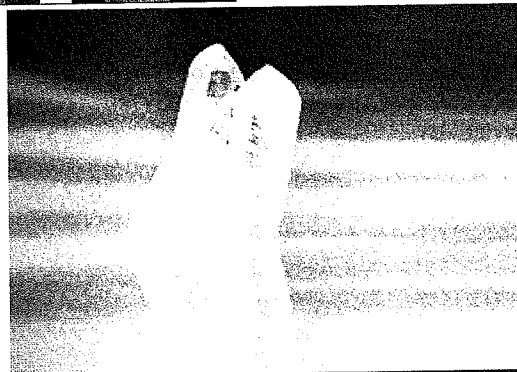
Silestone® has good shock resistance qualities which are higher than that of other products used in similar applications (granite, solid surfaces etc)

This resistance is achieved thanks to its quartz (giving it its hardness) and polyester resin (elasticity) and the vibrocompression system used during the production process.

No surface is indestructible so please take care not to place pans directly from heat onto a worktop.

COLOUR AND DESIGN

Silestone® is available in over 50 through body colours with a shade and tone consistency that is not found with natural stone. Available in a polished or leather finish, Silestone® has a colour portfolio to blend in with any style or design and is ideal for use in a wide variety of applications ranging from worksurfaces to tiles, vanity units, bar/reception tops, steptreads, wall cladding etc.





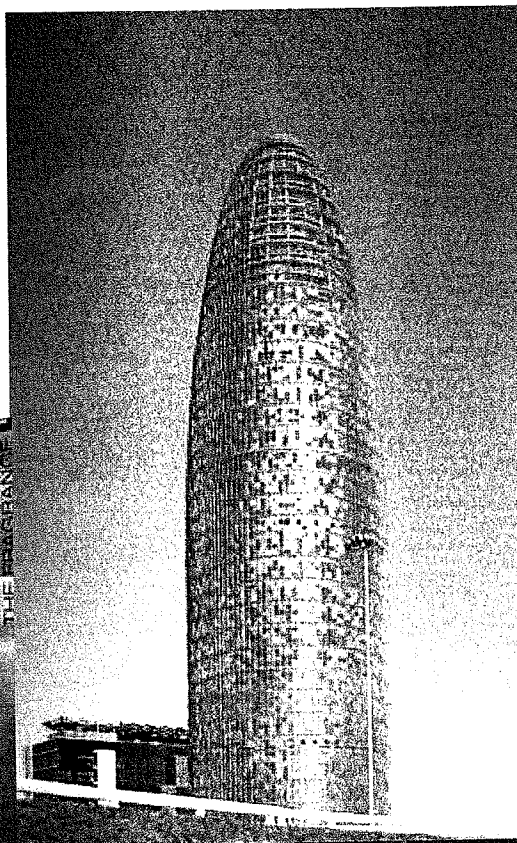
PROPERTIES		MEDIAN VALUES
Freeze / Thaw resistance	DIN EN 14617-5, Publication date: 2005-06, Agglomerated stone - Test methods - Part 5: Determination of freeze and thaw resistance; German version EN 14617-5:2005	$KM_{25} = (RM_f/R_f) medio = 1,08$
Compressive Strength	DIN EN 14617-15, Agglomerated stone - Test methods - Part 15: Determination of compressive strength; German version EN 14617-15:2005	Average compression: 150,03 MPa
Flexural strength	DIN EN 14617-2, Publication date: 2004-09, Agglomerated stone - Test methods - Part 2: Determination of flexural strength (bonding); German version EN 14617-2:2004	average $R_f = 43,6$ MPa
Impact resistance	DIN EN 14617-9, Publication date: 2005-06, Agglomerated stone - Test methods - Part 9: Determination of impact resistance; German version EN 14617-9:2005	Tile of 220x200x200 mm Average value: 80,25 cm
Thermal shock resistance	DIN EN 14617-6, Publication date: 2005-06, Agglomerated stone - Test methods - Part 6: Determination of thermal shock resistance; German version EN 14617-6:2005	Average bending resistance after frost: 42,6 Mpa
Water absorption	DIN EN 14617-1, Agglomerated stone - Test methods - Part 1: Determination of apparent density and water absorption; German version EN 14617-1:2005	Average water absorption: 0,15% Densidad aparente media: 2352 kg/m ³
Chemical resistance	DIN EN 14617-10, Publication date: 2005-06, Agglomerated stone - Test methods - Part 10: Determination of chemical resistance; German version EN 14617-10:2005	LOOK AT CHEMICAL TABLE RESULTS
Thermal expansion	DIN EN 14617-11, Publication date: 2005-06, Agglomerated stone - Test methods - Part 11: Determination of linear thermal expansion coefficient; German version EN 14617-11:2005	Thermal expansion coefficient: $38,62 \times 10^{-6} / ^\circ\text{K}$
Scratch resistance	EN 101	Maximum 7
Coefficient of friction	EN 14231:2005	Dry: USRV 42 Wet: USRV 5
Coefficient of friction	DIN 51130	Polished: total angle: 2,1° Non classifiable Leather: total angle: 1,3° Non classifiable Honed: total angle: 0,8° Non classifiable

CHARACTERISTICS

PRODUCTS TESTED	GRADE OF INCIDENCE			COMPARATIVE SURFACES			
	1 hr	8 hr	24 hr	SILESTONE	GRANITE	MARBLE	SOLID SURFACES
OLIVE OIL	NO	NO	NO	SHOCK RESISTANCE	STRONG	MEDIUM	LOW
CALGONIT	NO	NO	NO	BENDING RESISTANCE	STRONG	MEDIUM	MEDIUM
BEER	NO	NO	NO	RESISTANCE TO ACIDS/OILS	STRONG	MEDIUM	MEDIUM
COKE	NO	NO	NO	COLOUR RESISTANCE	STRONG	MEDIUM	STRONG
CORAL (WASHING-UP LIQUID)	NO	NO	NO	RESISTANCE TO SCRATCHING	STRONG	STRONG	LOW
LEMON LIQUID	NO	NO	NO	MECHANICAL RESISTANCE			
BLEACH	NO	NO	NO		RIVERS SERIES	ZEN SERIES	GRANITE BLANCO CRISTAL
FAIRY ULTRA	NO	NO	NO	IMPACT RESISTANCE (CM)	125	130	64
LEMON FANTA	NO	NO	NO	FLEXURAL RESISTANCE (MPA)	40,7	34,3	14,5
ORANGE FANTA	NO	NO	NO	STRENGTH RESISTANCE (MPA)	233,6	212	145
MILK	NO	NO	NO				GRANITE SILVESTRE
FAIRY	NO	NO	NO				TRAVERTINE ROMANO
TEA	NO	NO	NO				BLANCO MACEL
VIAXAL	NO	NO	NO				
WINE VINEGAR	NO	NO	NO				
ROSE WINE	NO	NO	NO				
AJAX	NO	NO	NO				
ORANGE JUICE	NO	NO	NO				
COFFEE	NO	NO	NO				
	1 hr	8 hr					
CHLORHIDRIC ACID SOLUTION 50%	NO	NO					
SDSIC HIDROXIDE SOLUTION 50%	NO	NO					

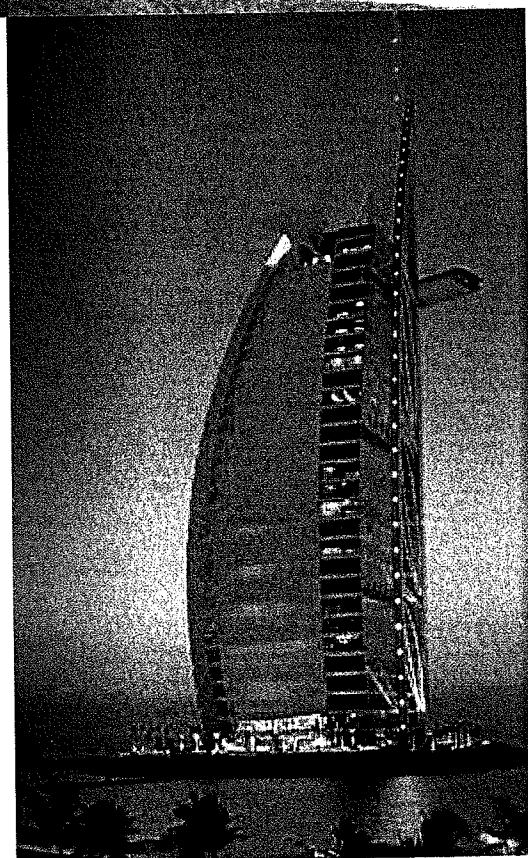


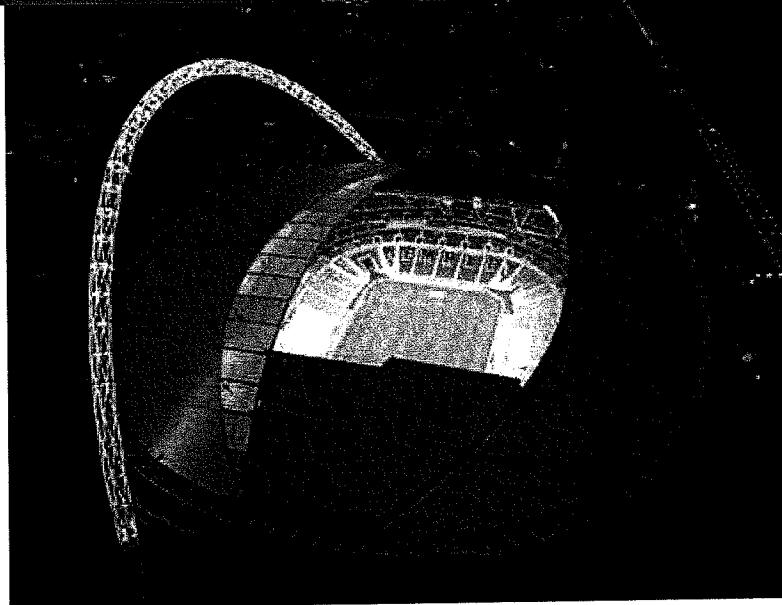
PROJECTS



WHY SILESTONE?

- **HYGIENIC**
THE ONLY QUARTZ WITH
EXCLUSIVE ANTIBACTERIAL
PROTECTION
- **CHOICE**
AVAILABLE IN OVER 100 COLOURS AND
TEXTURES.
- **AVAILABILITY**
THE LARGEST STOCK OF
QUARTZ WORLDWIDE.
- **PEACE OF MIND**
THE WORLD AND UK LEADER
IN QUARTZ SURFACES.





Brussels Airport - Brussels, Belgium
 Unique Hotel - Sao Paula, Brazil
 Burj Al Arab Hotel - Dubai, United Arab Emirates
 Madrid Airport - Madrid, Spain
 Barcelona Airport - Barcelona, Spain
 McDonald's
 Bernabeu Stadium - Madrid, Spain
 Vicente Calderón Stadium - Madrid, Spain
 American Airlines Ticket Counters - Dallas, Chicago, Los Angeles, USA
 University North Carolina - North Carolina, USA
 Le Carrousel Du Louvre Museum - Paris, France
 Tel- Aviv Airport - Tel-Aviv, Israel
 Porto Santo Airport - Oporto, Portugal
 Oasis Leisure Village - Cumbria, United Kingdom
 Odean Cinema- Lancaster, United Kingdom
 Wembley Stadium - London, United Kingdom

Great Western Hotel - London, United Kingdom
 Triangle Center - Manchester, United Kingdom
 Comfort Inns - United Kingdom
 David Lloyds Leisure Centres - United Kingdom
 Grosvenor Casinos - United Kingdom
 JD Weatherspoons - United Kingdom
 Premier Lodges - United Kingdom
 Stanley Casino - United Kingdom
 Virgin Cinemas - United Kingdom
 Warner Brothers Cinema - United Kingdom
 Marriot Hotels - United Kingdom
 The Hotel - Geneva, Switzerland
 CAF Trains - Turkey
 Universal Studios - California, USA
 Hilton Hotel - Chicago, USA
 Nike Headquarters - Barcelona, Spain



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